

DIFFUSION BARRIERS COMPRISING A SELF-ASSEMBLED MONOLAYER

ABSTRACT OF THE DISCLOSURE

The present invention provides a method for forming a diffusion barrier layer,
5 a diffusion barrier in an integrated circuit and an integrated circuit. The method for forming a diffusion barrier involves the following steps: 1) preparing a silicon substrate; 2) contacting the silicon substrate with a composition comprising self-assembled monolayer subunits and a solvent; and, 3) removing the solvent. The diffusion barrier layer includes a self-assembled monolayer. The integrated circuit includes a silicon substrate, a diffusion barrier layer and a
10 metal deposited on the diffusion barrier layer. The diffusion barrier layer in the integrated circuit is covalently attached to the silicon substrate and includes a self-assembled monolayer.

PA 3176034 v1